

Section V

A. Management

Management of noxious weeds is much like modern wildfire management. Early detection, rapid response (EDRR). It is important that there is a balance of all four elements for effective management. To date, Wasatch County has done a fair job in detection and suppression, and we are now increasing our efforts in prevention and re-vegetation. Budgeting for wildfire management is spread as follows: prevention- 15%, detection-23%, suppression-59%, revegetation-3%. It is suggested that a similar budget be established for the management of a noxious weed program. (Dewey, Steven; Noxious Weeds; A Biological Wildfire). In order to accomplish above management strategy more than just the county must be players in the control of noxious weeds.

B. Agency Coordination and Cooperation

This is a vital link in management and control of noxious weeds within the county, and throughout the state for that matter. There is no possible way management of noxious weeds will ever happen without agency coordination and cooperation. The job of doing so is just too big and too complicated. Planning for budgets, educating the public, mapping of new weed locations, is a job that everyone needs to be involved in. Wasatch County Coordinated Weed Management Area (CWMA) established for the County, is the main tool to obtain cooperation and coordination of the noxious weed program among the land management agencies & private land owners. (See Appendix J and CWMA bylaws) The CWMA has resulted in increased sharing of expertise, information, resources, and provide a process to improve the efficiency and effectiveness of the noxious weed program in Wasatch County.

C. Budget

As indicated earlier in this report, Wasatch County is now spending over \$200,000 each year for detection and suppression of noxious weeds. In addition, for the past 5 years we have spent an additional \$60,000 to \$100,000 in grant monies which includes matching funds which can be labor and equipment provided under the CWMA Program. The grant funds come from federal, private & state funding. However, there has been very little funding for prevention by any of the agencies. If Wasatch County is going to get on top of the weed problem, there is a need to increase their efforts in the prevention phase. The Forest Service, State Parks & Recreation, Division of Wildlife, Utah Department of Transportation are also providing funding for the control of noxious weeds, on their lands. County budgets should be coordinated with funds from other state and federal agencies to accomplish the total job of weed management. Future year budgets for all agencies should reflect a needed increase in prevention, as well as maintain the effort in detection and suppression for all agencies. Sites where major eradication projects have been completed or that are in progress should be re-vegetated to help prevent the return of the noxious weeds.

D. **Prevention**

It is important that an increased effort be made in the county in this area, as identified in the budget section. Education concerning the impact that noxious weeds can have on land they invade is a primary importance. Public support for increased awareness needs to come from all parts of county government and those involved in management of noxious weeds. This job can no longer be left to one individual in the county, but must come from all agencies within the county. With an increased effort by members of the weed board to educate the government officials and the public, the support will come.

Increased effort to teach noxious weed prevention needs to be taught in grade schools by such programs as the Woodsy Owl provided by the Forest Service. Efforts also need to go forth to let businesses and other interest know of the high cost of noxious weed invasions.

E. **Public Involvement**

Through an increased education program it is hopeful that the public will become more aware of the noxious weed problem and its costs to the environment. As we educate our public in the prevention, it is hopeful they will be able to identify and report to local government officials, weed board members and others who are responsible concerning weed infestation. Key public that needs to be heard from are: recreationalists, those who are out riding, walking, riding mountain bikes, motor bikes, fishermen and hunters, who cover almost every inch of the land. They are an excellent source of information for the spread of noxious weeds on public and larger tracts of private lands.

F. **Suppression (containment and control)**

Suppression suggests that the weeds are done away with or that they are held to a level that provide little or no threat to the environment. As the county approaches the mountainous task of managing the 7,000 acres of weeds it now has, there is a need to decide what level of suppression can be given and how much money can be used for that effort. Currently the weed board members agree that there is a need to plan for control of leafy spurge, white top, dyers woad, spotted knapweed, yellowstar thistle and russian knapweed, and the toadflaxes. Because of the large acreage involved with musk thistle, scotch thistle, and Squarrose Knapweed containment is the goal. Species such as Canada Thistle, quack grass, and field bindweed are important but management of these species cannot be given priority with the other species listed above. The last two listed weeds are native species and with proper management of the land, they are manageable. There are several steps that can be taken to manage and suppress weeds. The current program within the county has relied on spraying with some use of biological control which has not been all that successful. The county needs to rely on a multi effort for suppression of noxious weeds. It is important to point out that it cannot be done by the county alone. Every land owner be it private or

public, must do their part to hold the line on the spread of noxious weeds. This can be done by several methods such as: spraying, pulling, grubbing, mowing, biological. Regardless what method is used by the landowner, the county and other land owners must do all they can in preventing noxious weeds from going to seed for the current growing season but for several years there after. This is necessary because many of these weeds have seeds that are viable for 8 to 50 years once they are present in the soil. Several spread by underground roots that are hard to kill with only one effort, so the job must go on each year. No longer can property owners neglect this important task. If they do, they will soon find their lands useless for grazing or other values. In addition, these lands become a public nuisance to their neighbors and the community as a whole. Those who are developing lands for sale etc. too, must also take part or be limited as to how the land may be used, until they have the weed problem under management with the growth now occurring in the county. Land development is the most viable way the noxious weeds are being spread. Therefore, developers must submit a development plan to the county planner to prevent the spread of noxious weeds.

G. **Possible Methods of Control**

As a county weed board we strongly urge the control of weeds whenever and wherever possible. Where land is being developed, developers and landowners must pay close attention to the spread of noxious weeds. It is the legal requirement of the property owner, whether it is an individual, a group, or a government agency to control the weeds on the land that they own or administer.

There are a number of methods available to control weeds. However, the best method of control is to prevent the infestation in the first place:

1. **Wet Land Weed Control:**

Wet Land Weed Control is made difficult due to EPA regulation's and

accessability to infestations.

Aquatic weeds block water flow in canals and ditches causing serious problems. It restricts delivery of irrigation water to farms, plugs off drains causing flooding problems and causes higher water levels, putting pressure on the canal banks.

The Wasatch County Noxious Weed Plan is only concerned with controlling noxious and new invading weed species.

2. **Biological Control:**

Biological control is the ideal program for a wet land infestation and/or lands near water where herbicide use is restricted. Introducing natural enemies to these noxious weed species can slow down their growth, eliminate many viable seeds, and help destroy their massive root systems. Biological control alone will not eliminate the problem, but it does slow it down and combined with other control methods such as mechanical, cultural and chemical, it can be very effective. We have introduced a Rinocillis Beetle in the County which is helping to control the spread of musk thistle. This is helping some to reduce the spread of this species but is not completely successful. We have also introduced two other species of beetle's, Aphthona Flava & Copper Leafy Spurge Flea Beetle to help control the spread of leafy spurge. Today we have not found great success of biological control in leafy spurge, but it is hopeful that we will be successful in this effort.

3. **Mechanical Methods :**

Mechanical methods are frequently used for dredging or ditching. Weeds are a major cause of silting and bank deterioration. Harvesting has been used back east, but it is time consuming, laborious and very expensive. Disposal of the harvested weeds can also be a problem. Since these methods generally provide only short term results, they need to be employed on a continual basis

4. **Cultural Methods:**

Planting competitive plants will help, but make sure that what you plant will not be destroyed while treating noxious weeds. This is especially true with chemical treatment. Noxious broad leaf plants can effectively be treated in grass land with a selective herbicide such as 2, 4-D. Planting a competitive broad leaf in a noxious infestation, would be a waste of time and money. Make sure the problem is solved before introducing plants that are susceptible to the same treatment as the noxious weeds.

Treated areas, where native species will not grow back in, should be replanted to prevent erosion, and create competition against new invasions.

Many times draining an infested area or water way is used for treatment purposes, but if not employed with proper planning, this technique can distract from the recreational and aesthetic value of water, destroy fish and wildlife habitat and lead to new problems more serious than the original infestation.

5. **Chemical Control:**

Until recently, the major factor limiting the use of chemicals has been the availability of effective herbicides approved for use in aquatic and wetland situations.

Some forms of 2, 4-D can be used up to the waters edge. The seeds produced along a canal or ditch bank can travel in irrigation water to infest crop lands all along it's course.

If you use 2,4-D in wetland areas be sure to read and follow the recommended procedures on the label, Rodeo is the only chemical that is approved for all aquatic sites. Rodeo controls emerged and ditch bank weeds which grow in and around water. It can be used in all bodies of water which may contain flowing or non-flowing water. This includes irrigation and drainage canals, and ditches, ponds, lakes, rivers and others. There is no restriction on the use of water after application for recreation or domestic purposes. Rodeo is practically non-toxic to mammals, birds and fish. It dilutes in water easily, since it is completely water soluble. It is readily deactivated by soil particles and bio-degraded by micro-organisms present in soil and water. Irrigation water containing Rodeo, from spraying according to the label, will not injure crops.

The only restrictions for Rodeo is that it should not be applied to tide water areas, or crop levee's when flood water is present or within one half mile up stream of potable water intakes.

When spraying a bank you should spray traveling up stream and only over spray one foot onto the water. Don't spray across the canal, travel one side at a time. Rodeo is effective against many types of weeds and brush, but read and follow the label before treatment. Make sure the weed you target is susceptible and that you use the recommended rate. Ground water contamination is also a major concern. Chemical Treatment is probably our most effective method of noxious weed control, but in all treatment/areas our environment must come first.

In most cases, eliminating noxious weeds, which are not native to our natural setting, will benefit our environment, but when ground water contamination is possible, chemical treatment is not an option. Other methods or combination of methods such as mechanical, cultural, or biological must be used.

The following is a list of the major weeds that cause problems in Wasatch County and a list of possible herbicides that can help control the weed. For more information about weed identification and control contact the local Utah State University Extension Office or the County Weed Board Members.

Leafy Spurge

A perennial, up to 3 feet tall; reproduces by vigorous rootstalks and seed. Leaves are alternate, narrow, 1 to 4 inches long. Stems are thickly clustered. Flowers are yellowish-green, small, arranged in numerous small clusters and subtended by paired heart-shaped yellow-green bracts. Roots are brown, containing numerous pink buds which may produce new shoots or roots. The entire plant contains a milky juice. Seeds are oblong, grayish to purple, contained in a 3-celled capsule, each cell containing a single seed. Possible herbicides for control: Plateau, Banvel, Tordon, and Landmaster. Edict 2SC, Veteran 720, and Weedmaster.

White Top (Hoary-Cress)

A deep-rooted perennial up to 2 feet tall, reproducing from root segments and seeds. Leaves are blue-green in color, and lance-shaped. Lower leaves are stalked; upper leaves have two lobes clasping the stem. Plants have many white flowers with four petals, giving the plant a white, flat-topped appearance. Heart-shaped seed capsules contain two reddish-brown seeds separated by a narrow partition. Plants emerge in very early spring and have bloomed and set seed by midsummer. Possible herbicides for control: 2,4-D, Patriot, Escort or Ally.

Diffuse Knapweed

Diffuse knapweed was introduced from Eurasia and now represents a threat to pastures and rangelands. Diffuse can be an annual or a short lived perennial, 1 to 2 feet tall, stems are rough to the touch. Leaves are pinnately divided; the reduced leaves of the inflorescence are mostly entire. Flowering heads are numerous and narrow. Flowers are white to rose or

sometimes purplish. The tips of the bracts are tipped with a slender spine. The flowering period is July to September. Some herbicides that can be used to control is Tordon 22K, Curtail, and Milestone.

Squarrose Knapweed

A long-lived taprooted perennial typically reaching heights of 12 to 18 inches. Stems are highly branched, with deeply dissected lower leaves and bract-like upper leaves. Flower heads are relatively small, containing four to eight rose or pink colored flowers, usually developing no more than three to four seeds per head. Bract tips are recurved or spreading, with the terminal spine longer than lateral spines on each bract. It is often confused with diffuse knapweed, but differs principally in the fact that it is a true perennial, and bracts are recurved. Unlike diffuse knapweed, seed heads are highly deciduous, falling off the stems soon after seeds mature. Squarrose knapweed is a competitive rangeland weed. Possible herbicides for control: Tordon, 2,4-D, and Banvel.

Spotted Knapweed

Spotted knapweed is a biennial or usually short-lived perennial with a stout taproot. It can have one or more stems, branched one to 3 feet tall. Basal leaves up to 6 inches long, blades narrowly elliptic to oblanceolate, entire to pinnately parted; principal stem leaves pinnately divided. Flowering heads are solitary at end of branches; involucre bracts stiff and tipped with a dark comblike fringe. The ray flowers are pinkish-purple or rarely cream-colored. Fruits are about 1/8 inch long, tipped with a tuft of persistent bristles. The flowering period extends from June to October. Possible herbicides for control are: Tordon, 2, 4-D Banvel, Milestone, Redeem, and Curtail.

Russian Knapweed

Russian knapweed is widely established in the western United States. This species forms colonies in cultivated fields, orchards, pastures and roadsides. Russian knapweed plants spread by black, deep growing roots which penetrate to a depth of over 8 feet. Emerging plants leaves are toothed and covered with fine hair, giving them a blue-green color. Flowers of this perennial are pinkish-purple. Bracts have pointed papery tips. Stems are erect, openly branched, 18 to 36 inches tall. Lower leaves are deeply lobed, 2 to 4 inches long; upper leaves entire or serrate,

narrow to a sessile base. Cone-shaped flowering heads are 1/4 to 1/2 inch in diameter, solitary at the tip of leafy branchlet. Possible herbicides for control are: Roundup, Tordon, Curtail, Milestone, Redeem, Veteran 720, & Patriot.

Canada Thistle

Canada thistle is a colony-forming perennial that forms deep and extensive horizontal roots. Stems are 1 to 4 feet tall, ridged, branching above. Leaves are alternate, lacking petioles, oblong or lance-shaped, divided into spiny-tipped irregular lobes. Flowers are unisexual, on separate plants; flowers purple (occasionally white) in heads 1/2 to 3/4 inch in diameter; involucre bracts are spineless. Fruits are about 1/8 inch long, somewhat flattened, brownish, with a tuft of hairs at the tip. Early spring growth appears as rosettes with spiny-tipped wavy leaves. Possible herbicides for control are: 2,4-D, Banvel, Tordon, Escort, Curtail, Plateau, Edict 25c, Milestone, Patriot, Redeem, Ally, and Telar.

Musk Thistle

Musk thistle is a biennial or sometimes a winter annual, which grows up to 6 feet tall. Leaves are dark green with a light green midrib, deeply lobed, and spiny marginate. Leaves extend onto the stem giving a winged appearance, flower heads are terminal, solitary, 1 1/2 to 3 inches in diameter, and usually bent over. Flowers are deep rose, violet or purple, occasionally white; they are subtended by broad, spine-tipped bracts. Fruits are 3/16 inch long, shiny, yellowish-brown with a plume of white hair-like fibers. Possible herbicides for control are: Weedmaster (2,4-D, and Banvel), Curtail, Tordon, Milestone, Patriot, Plateau, Escort, Veteran 720, and Telar. They can also be removed with a shovel or hoe by digging below the root crown or pulling prior to flowering.

Quack Grass

Quack grass is an aggressive perennial grass reproducing by seed. Quack grass reduces productivity in crops, rangeland and pasture. Quack grass spreads by a shallow mass of long, slender, branching rhizomes. Rhizomes are usually yellowish-white, sharp-pointed, somewhat fleshy. They are able to penetrate hard soils or even tubers and roots of other plants. Stems are

erect and usually 1 to 3 feet tall. Leaf blades are 1/4 to 1/2 inch wide, flat, pointed and have small auricles (ear-like appendages) at the junction of blade and sheath. Leaf sheaths and the upper surface of leaf blades may be thinly covered with soft hairs. Spikelets are arranged in two long rows, borne flatwise to the stem. Florets are awnless, or with short straight awns. Possible herbicides for control are: Roundup, Eptam, and Fusilade.

Johnson Grass

Johnson Grass was introduced from the Mediterranean region as a hay or forage crop. Johnson Grass is a perennial plant that spread by seed or rhizomes. The stems are erect and generally solid with prominent nodes. It will grow from 2 to 8 feet tall. Leaf blades are flat with conspicuous midveins and are often up to 1 inch wide with terminal fringe of fine hairs. Mature inflorescence are large and open and shiny with reddish to purple spikelets. Some herbicides for control are Round-up, Ultra 4S, Select 2E and Post Plus 1 EC.

Field Bindweed

Field bindweed is a perennial from an extensive root system, often climbing or forming dense tangled mats. Stems are prostrate, 1 to 4 feet long. Leaves alternate, more or less arrowhead-shaped, pointed or blunt lobes at the base. The flowers are bell-or trumpet-shaped, white to pinkish, approximately 1 inch in diameter with 2 small bracts located 1 inch below the flower. Fruit is a small, round capsule, usually 4-seeded. It is a difficult weed to eradicate because of the long, deep taproot which can penetrate the soil to a depth of 10 feet and which gives rise to numerous long lateral roots. Seeds remain viable for up to 50 years. The flowering period is from late June until frost in the fall. Possible chemical control products are: Banvel, Tordon, Roundup, Patriot, Escort, Veteran 720, Edict 2SC, and 2,4-D.

Yellowstar Thistle

Yellow star thistle is an annual, 2 to 3 feet tall, has rigid branching, winged stems covered with a cottony pubescence. Basal leaves are deeply lobed while upper leaves are entire and sharply pointed. Flower heads are yellow, located singly on ends of branches, and armed with sharp straw-colored thorns up to 3/4 inch long. Fruits from ray flowers are dark-colored without

bristles, while fruits from disk flowers are lighter and have a tuft of white bristles. Possible chemical control products are: Tordon, Curtail, Milestone, Redeem, Escort, Clopyralis, and Banvel.

Scotch Thistle

Scotch thistle is a biennial that grows up to 12 feet tall. Stems have broad, spiny wings. Leaves are large, spiny, and covered with fine dense hair, giving a grayish appearance. Upper leaves are alternate, coarsely lobed; basal leaves may be up to 2 feet long and 1 foot wide. Flower heads are numerous, 1 to 2 inches in diameter, bracts spine-tipped. Flowers are violet to reddish. Fruits are about 3/16 inch long, tipped with slender bristles. Possible chemical control products include: Tordon, Banvel, Telar, Patriot, 2,4-D (Weed Master). They can also be removed by digging below the root crown or pulling prior to flowering.

Purple Loosestrife

Purple Loosestrife was introduced as an ornamental species in aquatic sites which soon took over stream banks and shorelines of shallow ponds. Purple Loosestrife is a rhizomatous perennial with erect stems, often growing 6 to 8 feet tall usually found in moist or marshy spots. Leaves are simple, entire, and opposite or whorled. The flowers are rose-purple and have 5 to 7 petals. Purple Loosestrife flowers from June to September. Some herbicides for control are Rodeo for wetlands and Round-up for uplands.

Dyers Woad

Dyers woad is a winter annual, biennial or short lived perennial; 12 to 48 inches in height. Leaves of dyer's woad are alternate, simple, petiolate, bluish-green with a whitish nerve on the upper surface of the blade. The inflorescence has a flat top, petals yellow; fruit a pod is black or purplish brown and one-celled, containing a single seed. It has a thick tap root which may exceed 5 feet in depth. Once leaves are removed mechanically, plants will regenerate from roots.

Possible chemical control products: 2,4-D, Escort, and Telar. They can also be removed by pulling or grubbing, but the entire root stock needs to be removed.

Tall White Top (Perennial Pepperweed)

This plant is a perennial, 1 to over 3 feet in height. The leaves are lanceolate, bright green to gray-green basal leaves larger than upper leaves. Flowers are white, in dense clusters near ends of branches, very small; seeds 2 per fruit, rounded, flattened, slightly hairy, about 1/16 inch long, and reddish-brown. Deep-seated rootstocks make this weed difficult to control. Flowering occurs from early summer to fall. Possible chemical control products: Landmaster, Telar, Patriot, and Escort.

Dalmation Toadflax

Dalmatian toadflax is a perennial, up to 3 feet tall, reproducing by seed and underground root stalks. Leaves are dense, alternate, entire, upper leaves are conspicuously broad-based. Flowers are borne in axils of upper leaves and are 2-lipped, ¾ to 1 ½ inches long, with a long spur, yellow with an orange, bearded throat. Fruit a 2-celled capsule with many irregularly angled seeds. Possible chemical control product: Tordon 22K, Patriot, Veteran 720, Plateau, and Edict 2SC.

Yellow Toadflax

Yellow toadflax is perennial, 1 to 2 feet tall, reproducing by seed and underground root stocks. Leaves are pale green, numerous, narrow, pointed at both ends, 2 or more inches long. Flowers are 1 inch long with bearded, orange throat. Fruit is round, ¼ inch in diameter, brown, 2 celled, with many seeds. Seeds are dark brown to black, 1/12 inch in diameter, flattened with a papery circular wing. Possible chemical Control Products: Roundup, Patriot or Tordon 22K.

Houndstongue

Houndstongue is a biennial growing 1 to 4 feet tall and reproducing by seed. Leaves are

alternate, 1 to 12 inches long, 1 to 3 inches wide, rough, hairy, and lacking teeth or lobes.

Flowers are reddish-purple and terminal. The fruit is composed of four prickly nutlets each about 1/3 inch long. Hounds tongue is toxic, containing pyrolizidine alkaloids, causing liver cells to stop reproducing. Horses may be especially affected when confined in a small area infested with Hounds tongue and lacking desirable forage. Possible chemical control products: 2,4-D, Patriot, and Banrvel. They may also be removed by pulling, digging or grubbing below the root crown prior to flowering.

Medusahead

Medusahead was introduced from Eurasia and is predominant on millions of acres Semi-arid rangeland in the Pacific Northwest. Medusahead is an aggressive winter annual 6 to 24 inches tall. Leaf blades are generally 1/8 inch wide or less. The mature awns are twisted, 1 to 4 inches long, stiff, and barbed. Sometimes it can be confused with foxtail barley or squirreltail. Medusahead flowering and seed formation occurs in May through June. Herbicides for control are Glyphosate, Paraquet, and Atrazine.

Black Henbane

Black Henbane is a native of Europe and was brought to the United States as an ornamentel. Black Henbane is used as medicines at controlled dosages, but is considered poisonous to human and livestock. Black Henbane may be annual or biennial and 1 to 3 feet tall. Leaves are coarsely toothed and foliage has a foul odor. Flowers on long racemes in axils of upper leaves are brownish yellow with a purple center and purple veins. Fruits are approximately 1 inch long. Herbicides for control are Escort, 2,4-D, Tordon 22K, Vanquish/Clarity, and Patriot.

Oxeye Daisy

Oxeye Daisy is a native of Eurasia and was introduced in the 19th century to North America. Oxeye Daisy was used as an ornamental plant, but escaped cultivation and was distributed across the U.S. Oxeye Daisy is an erect rhizomatous perennial 10 to 24 inches tall.

Leaves progressively reduce in size upward on stem. Basal and lower stem leaves are oblanceolate to narrowly obovate, 2 to 5 inches long including the petiole, margin crenate to lobed or parted. Upper leaves become sessile and merely toothed. Flowering heads are solitary at the ends of branches, about 1 ½ inches long. Fruits have 10 ribs. Herbicides for control are 2,4-D, Dicamba, Plateau, Tordon 22K, Redeem R & P and Milestone.

Poison Hemlock

Poison Hemlock is a native to Europe. This plant was brought over and used to kill the great philosopher Socrates. Poison Hemlock is a biennial that can grow 6 to 8 feet tall. In the first year, plants form a small seedling that resembles wild carrot. Plants usually bolt in the second year and produce numerous clusters of white flowers. Plants flower from April through July, and seeds begin in July and continue into winter. Most seeds mature before dispersal and can germinate immediately if environmental conditions are favourable, but some seeds remain dormant. Chemicals used for control are Picloram, dicamba, 2, 4-D and Glyphosate.

Salt Cedar (Tamarisk)

Salt Cedar is a native to Eurasia and now is wide spread through United States. Wasatch County is starting to be infested with Salt Cedar around Strawberry and home owners using it as an ornamental or landscaping. A mature Salt Cedar plant can transpire at least 200 gallons of water a day and will often dry up ponds and streams. Salt Cedar is a deciduous or evergreen shrub or small tree, 5 to 20 feet tall. Bark on saplings and stems are reddish-brown. Leaves are small and scale-like, on highly-branched slender stems. Flowers are pink to white, 5-petalled. Some herbicide for control is Garlon 3A or Garlon 4 for cut stump treatment and Plateau for foliage application.

St. Johnswort

St. Johnswort is a native of Europe and is frequently found in the Pacific Northwest, on sandy or gravelly soils. This weed contains a toxic substance which affects white-haired animals. An affected animal will rarely die but will often lose weight and develop a skin irritation when

exposed to strong sunlight. St. Johnswort is a perennial reproducing by seed or short runners. The stems are 1 to 3 feet high with numerous branches, rust colored, woody at the base. Leaves are opposite, not over 1 in long, covered with transparent dots. Flowers are $\frac{3}{4}$ inch in diameter, bright yellow, with 5 separate pedals. Chemical for control is Escort, 2,4-D, Tordon 22K and Patriot.

Sulfur Cinquefoil

Sulfur Cinquefoil is a native to Eurasia. It likes to grow in grasslands and dry forest zones. This plant does not do well in shady areas. Sulfur Cinquefoil is a long lived perennial, reproducing by seed plant upper and lower surfaces, yellowish green. Stems are 12 to 28 inches tall, branched near top, covered with hairs. There are numerous leaves on the stem. Flowers are $\frac{1}{2}$ to 1 inch in diameter. May bloom late may throughout summer and roots are woody. Herbicides for control is Picloram, Clopyralid, 2,4-D, Glyphosate, Tordon 22K, and Milestone.